

SMART METERS

Single Phase Smart Energy Meter

SPECTA 100

Product Information

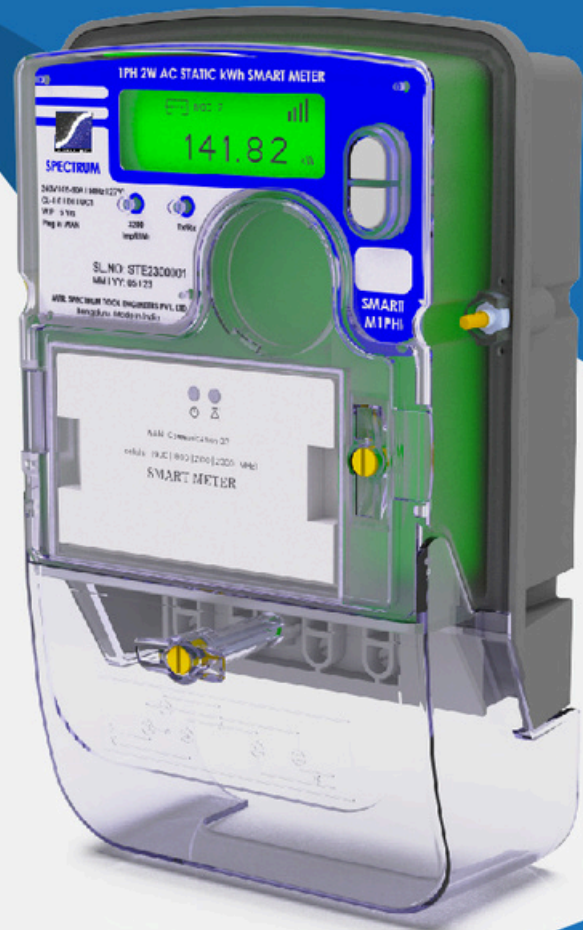
The SPECTA 100 smart meter is a unique product of SPECTRUM powered by AMI with remote disconnect/reconnect, demand management real time configurability for all key features with real time pluggable WAN communication module.

It covers the state of art smart functionality in handy with ready to go AMI in GPRS 2G/3G/IOT/PLC/RF communications modules by complying the IS 16444(Part 1) standards.

An Indigenously designed SPECTRUM Single phase smart meter can perform as post payment, prepayment and net meter for whichever the mode its configured at site.

The real time pluggable options gives a complete flexibility for the user to use convenient and economic technology for communication in the region.

The consumers can be highly benefitted by effective energy budgeting through balance and energy consumption information in monetary terms.



SPECIFICATIONS

Measurement

- Class-1 Accuracy as per IS 16444 (Part-1)Standards.
- DLMS inbuilt confirming IS 15959 (Part 2)
- Load survey and day survey as per standards.
- Neutral and phase measurements.
- Programmable TOD/TOU tariffing
- Operating Temperature -25° C to + 60° C
Storage : -40° C to + 80° C
- Remote load control - Integrated remote connect/disconnect
- Active ,apparent import and export MD register
- Smart AMI with programmable Post/ Prepaid and Net metering modes.
- 0.000001kwh resolution measurement
- Extensive revenue protection measures.
- Real Time Interoperable for Technology SWAP(GPRS-RF-PLC-IoT-WIFI-BLE)
- UC1 load switch with configurable demand and peak load.
- WAN-HAN upgradable.

Applications

- Residential Metering (Smart Home/Offices)
- Commercial metering.
- Small scale industrial metering.
- Smart city project metering as CCMS

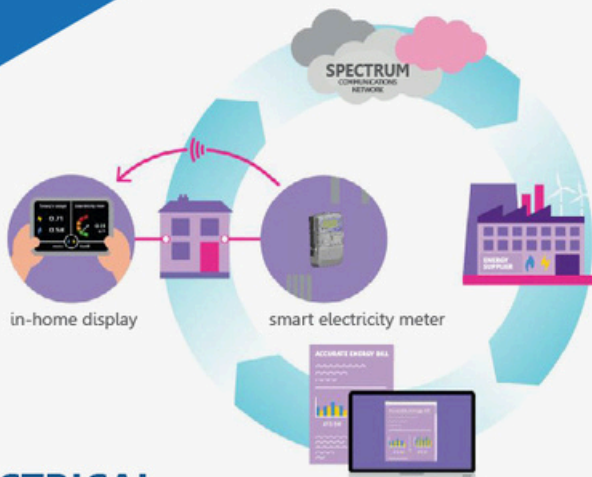
Mechanical

- Dimension — 217mm x 135mm x 75mm +/- 5 mm
- Weight — 0.8 kg (Approximately)
- Enclosure materials — Engineering Plastic as per standards



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ELECTRICAL

Voltage and Power Supply

- Voltage - 240V AC , Frequency - 50Hz (Standard)
- Power supply surge - 440V
- Burden < 10VA (as per IS 16444)
- Power consumption = 5Watt(As per Standard)

Current

- Current ranges 5-30A / 10-40A/ 10-60A / 10-100A
- Over Current: 30 Times I_{max} for 0.5 cycles
- Burden < 0.5VA
- Operating Temperature 27°C
- UC1 Load switch ranges 60A/90A/120A

Measured Energy Values

- Import/ Export/Net Wh and VAh
- Absolute Wh and VAh

System Integration Support

- Interoperable DLMS compliance
- Self- Integrable with IS 16444 compliant MDMS
- Self- Integrable with multi-vendor Coms
- Programmable Alarms and instant push

Time Clock and Calendar

- Inbuilt RTC
- Accuracy (internal) as per standard , within 15 seconds per month
- Backup time of 10 years without power (lithium iron battery)
- Supports Daylight Saving Time

Time of Use

- Programmable TOD
- 4 TOD Timings

Security

- Multi-level security (Username and Password including encrypted log-in)
- Up to seven independent security levels
- Up to six individual users
- AES 128 bit encryption

Tamper Detection and Alarms

- Provision for sealing with conventional wire or plastic seals
- Bypassing current and reverse current
- Advanced tamper detection and logging
- Pre-programmed alarms for meter self-check
- Alarms trigger, enunciators , relay outputs or communications event
- Alarm Trigger Push - First breath and instant alarm push
- Alarms are stored in event logs
- Neutral missing Tamper
- Self-diagnostic feature
- Up to 200 Events storage

Communication

- IS 15959 Part II compliance , 6LoWPAN , G3/ PRIME
- Optical, AMI and serial ports
- DLMS inbuilt Client and Server mode
- Pluggable and Technology interoperable WAN port
- Optional RS-232 with modem power supply (2G/ 3G supported)
- Optional RS-485 multi-drop (two or four wire RJ45 or two wire Screw terminal)
- UDP/IP/ PPP/GPRS capable
- Narrow Band PLC capable
- License Free RF capable (865-867, 409, 433 Mhz)
- ZIGBEE/WIFI / BLE capable
- First Breath and Last GASP compliance
- Supports Push and Pull

Battery Options

- Internal battery for Display and back up
- Separate Battery for RTC

Net Metering

- Inbuilt Net metering Mode
- Real-time Net metering Swap
- Configuration OTA remotely.
- Import, Export and Net Energy measurement

Meter Variants

- 1Phase 2W 5-30A
- 1Phase 2W 10-40A
- 1Phase 2W 10-60A
- 1Phase 2W 10-100A

Communication Variants

- Pluggable GPRS 2G/3G
- Pluggable IOT
- Pluggable RF (865-867 , 409 , 433MHz)
- Pluggable Narrowband PLC (G3/PRIME)
- Pluggable WIFI / BLE
- Optional RS232/RS485 Serial port COM
- Ethernet interface (Optional)

Load/Day Survey/Profile

- AMI Ready - Instant push and pull
- Inbuilt storage as per standard - expandable at factory
- Intervals programmable from 1 to 60 minutes
- Two independent surveys
- Energy, instantaneous readings as channel sources
- Ability to store average/minimum/maximum values for interval duration

Prepayment

- Inbuilt Prepayment mode
- Real-time prepayment and post payment selection.
- GPRS based Recharge capable
- Configuration of Mode over OTA
- Energy (kWh) and Value (Currency) based prepayment
- Programmable tariff plan

LCD Display

- LCD segment display
- Real-time Programmable display parameters
- Auto ,Push and INFO Mode
- Feature icons for special conditions
- Communication indication
- Display digit size: 4.5mm (W): 10mm (H)
- Definable enunciators
- Display available even without mains power

Environmental

- Operating temperature range : - 25< C to 60°C
- Limit range : -40°C to 70°C
- Storage range : -40-c to 80-c
- Relative humidity : Up to 75% mean, 95% non-condensing for 30 days
- Ingress protection : IP51
- Sealing : Break-open sealing provision as per Standards

KEY FEATURES

AMI

AMI READY



DISCONNECT
RECONNECT

LCD

LCD
DISPLAY



TECHNOLOGY
INTEROPERABLE

P-PAY

PRE
PAYMENT



TAMPER
PROOF



PLUGGABLE
WAN



OTA
READY